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(ROSPATENT) added to list of core patent offices covered
NEWS 4 FEB 28 PATDPAFULL - New display fields provide for legal status
data from INPADOC
NEWS 5 FEB 28 BABS - Current-awareness alerts (SDIs) available
NEWS 6 FEB 28 MEDLINE/LMEDLINE reloaded
NEWS 7 MAR 02 GBFULL: New full-text patent database on STN
NEWS 8 MAR 03 REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS 9 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 10 MAR 22 KOREAPAT now updated monthly; patent information enhanced
NEWS 11 MAR 22 Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS 12 MAR 22 PATDPASPC - New patent database available
NEWS 13 MAR 22 REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS 14 APR 04 EPFULL enhanced with additional patent information and new
fields
NEWS 15 APR 04 EMBASE - Database reloaded and enhanced
NEWS 16 APR 18 New CAS Information Use Policies available online
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based on application date in CA/CAPLUS and USPATFULL/USPAT2
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=> s helicoverpa armigera stunt virus or hasv
L1 62 HELICOVERPA ARMIGERA STUNT VIRUS OR HASV

=> s helicoverpa armigera stunt virus
L2 26 HELICOVERPA ARMIGERA STUNT VIRUS

=> dup rem l1
PROCESSING COMPLETED FOR L1
L3 37 DUP REM L1 (25 DUPLICATES REMOVED)

=> d 1-10 ti

L3 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI Isolation and identification of a new tetravirus from *Dendrolimus punctatus* larvae collected from Yunnan Province, China

L3 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI Maturation of a tetravirus capsid alters the dynamic properties and creates a metastable complex

L3 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
TI Diversity of enteric viruses detected in patients with gastroenteritis in a tertiary referral paediatric hospital

L3 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI Retroviral vectors with improved safety for gene therapy blocked from recombination by internal base pairing in transcripts

L3 ANSWER 5 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2
TI Modulation of Homo- and Heterodimerization of Harvey Sarcoma Virus RNA by GACG Tetraloops and Point Mutations in Palindromic Sequences

L3 ANSWER 6 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 3
TI Infection of its lepidopteran host by the **Helicoverpa armigera stunt virus** (Tetraviridae).

L3 ANSWER 7 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI *Heliothis armigera* stunt virus and its uses in protecting plants by genetic engineering

L3 ANSWER 8 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 4
TI Analysis of the capsid processing strategy of *Thosea asigna* virus using baculovirus expression of virus-like particles.

L3 ANSWER 9 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
TI Pathology and properties of the tetravirus **Helicoverpa armigera stunt virus**.

L3 ANSWER 10 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

TI Pathology and properties of the tetravirus **Helicoverpa armigera stunt virus**.

=> d ab

L3 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN

AB In this study, Dendrolimus punctatus tetravirus (DpTV) has been identified as a new member of the genus Omegatetravirus of the family Tetraviridae that may be related serol. to Nudaurelia capensis ω virus (N ω V). DpTV particles are isometric, with a diameter of about 40 nm and a buoyant d. of 1.281 g cm⁻³ in CsCl. The virus has two capsid proteins (of 62 500 and 6800 Da) and two single-stranded RNA mols. (RNA1 and RNA2), which are 5492 and 2490 nt long, resp. RNA1 has a large open reading frame (ORF) encoding a polypeptide of 180 kDa; RNA2 contains two partially overlapping ORFs encoding polypeptides of 17 and 70 kDa. The 180 kDa protein, which contains consensus motifs of a putative methyltransferase, helicase and RNA-dependent RNA polymerase, shows significant similarity to those of other tetraviruses. The 17 kDa protein is a PEST (Pro/Glu/Ser/Thr) protein of unknown function. The 70 kDa protein is the coat protein precursor and is predicted to be cleaved at an Asn-Phe site located after residue 570. The 70 kDa protein shows 86 and 66 % identity to its homologues in N ω V and **Helicoverpa armigera stunt virus**, resp. Secondary-structure anal. revealed that the RNAs of DpTV have tRNA-like structures at their 3' termini.

=> d so

L3 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN

SO Journal of General Virology (2005), 86(3), 789-796
CODEN: JGVIAY; ISSN: 0022-1317

=> d 2 ab

L3 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN

AB The assembly of monomeric protein subunits into a viral capsid is a finely tuned mol. process. In response to subtle changes in environmental conditions, this supramol. complex can dramatically reorganize. Defining the forces that control this structure and the cooperative action of subunits has implications for biol. and nanotechnol. The small icosahedral RNA tetravirus family members Nudaurelia ω capensis (N ω V) and **Helicoverpa armigera stunt virus (HaSV)** can be purified as provirions, and maturation to capsids can be induced by a drop in pH. In this study, a comparison of capsid secondary structure using FT-IR revealed that the procapsid has more α -helical content than the capsid, supporting the proposal that helix to coil transition may be important for maturation. The dynamic properties of the two states were probed using limited proteolysis and peptide mass mapping to identify regions of significant flexibility. Interestingly, the initial sites of protease cleavage were the N and C terminal domains that are internal in high-resolution models, and to inter-subunit surfaces. Further comparison of the two particle forms using FT-IR revealed that in response to thermal stress, the provirion disassembles and unfolds in a cooperative manner over a narrow temperature range (.apprx.5 $^{\circ}$ C). Paradoxically, the capsid form, which is stable in a wide range of pH and ionic conditions and is more resistant to proteolysis, responds to thermal stress at a lower temperature than the procapsid form. This suggests that a metastable state is the end product of assembly.

=> d 2 so

L3 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN

SO Virology (2005), 334(1), 17-27

=> d 3 ab

- L3 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
 AB The genetic diversity of enteric viruses co-circulating in a cohort of patients with viral gastroenteritis in a large tertiary pediatric hospital in London, UK, was determined. Multiple strains of noroviruses (NV), sapoviruses (SV) and astroviruses (**HAsV**) were detected in these patients, indicating the likelihood of multiple introductions from different sources, possible sub-clin. infections and simultaneous infection with different viruses in immunocompromised and other patients. Routine screening of immunocompromised patients and infection control procedures are important to prevent nosocomial infection.

=> d 3 so

- L3 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
 SO Journal of Medical Virology (2004), 73(3), 443-449
 CODEN: JMVIDB; ISSN: 0146-6615

=> d 11-20 ti

- L3 ANSWER 11 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 5
 TI Replication-independent assembly of an insect virus (Tetraviridae) in plant cells.
- L3 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6
 TI Reverse transcription of a naturally occurring nonretroviral RNA produces a precise deletion in the majority of its cDNA products
- L3 ANSWER 13 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 7
 TI The specificity of **Helicoverpa armigera stunt virus** infectivity.
- L3 ANSWER 14 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 8
 TI Sequence of the Genomic RNA of Nudaurelia β Virus (Tetraviridae) Defines a Novel Virus Genome Organization
- L3 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
 TI Altering the cell tropism of small RNA viruses and virus-like particles by introduction of immunoglobulin-like domains into the p71 coat protein
- L3 ANSWER 16 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
 TI Cell-matrix interactions of normal and transformed human keratinocytes in vitro are modulated by the synthetic phospholipid analogue hexadecylphosphocholine.
- L3 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 9
 TI Multiple regions of Harvey sarcoma virus RNA can dimerize in vitro
- L3 ANSWER 18 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 10
 TI Sequence of RNA2 of the **Helicoverpa armigera stunt virus** (Tetraviridae) and bacterial expression of its genes.

- L3 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 11
TI Properties of the carcinoma-associated antigen MH 99/KS 1/4 in normal and transformed human keratinocytes: regulation of synthesis, molecular crosslinking and ultrastructural localization
- L3 ANSWER 20 OF 37 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 12
TI The larger genomic RNA of Helicoverpa armigera stunt tetravirus encodes the viral RNA polymerase and has a novel 3'-terminal tRNA-like structure.

=> d 21-30 ti

- L3 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI Insect viruses and their uses in protecting plants
- L3 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 13
TI Carcinoma-associated 38-kD membrane glycoprotein MH 99/KS 1/4 is related to proliferation and age of transformed epithelial cell lines
- L3 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 14
TI Anoxia-inducible rat VL30 elements and their relationship to ras-containing sarcoma viruses
- L3 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI A novel small RNA virus isolated from the cotton bollworm, Helicoverpa armigera
- L3 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 15
TI Different levels of v-Ha-ras p21 expression in primary keratinocytes transformed with Harvey sarcoma virus correlate with benign versus malignant behavior
- L3 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 16
TI Evidence that retroviral transduction is mediated by DNA, not by RNA
- L3 ANSWER 27 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 17
TI Ras induced lesions in a heterotopic mouse bladder
- L3 ANSWER 28 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 18
TI Similar and synergistic inhibition of gap-junctional communication by ras transformation and tumor promoter treatment of mouse primary keratinocytes
- L3 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI The ras genes transform without mutant codons and are possibly activated by truncation of a newly defined ras exon
- L3 ANSWER 30 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
TI MALIGNANT TRANSFORMATION OF IMMORTALIZED HUMAN SKIN KERATINOCYTES BY RAS-ONCOGENE TRANSFECTION.

=> d 31-37 ti

- L3 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 19
TI The expression of integrated plasmid DNA depends on copy number
- L3 ANSWER 32 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 20
TI Immunocytochemical localization of RasHa p21 in normal and neoplastic cells in fixed tissue sections from Harvey sarcoma virus-infected mice
- L3 ANSWER 33 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 21
TI Infection of immune mast cells by Harvey sarcoma virus: immortalization without loss of requirement for interleukin-3

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L3 ANSWER 34 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on
STN
TI SHARED INTERSPECIES ANTIGENIC REACTIVITIES AMONG HAMSTER AND FELINE
ONCOVIRUSES.

L3 ANSWER 35 OF 37 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on
STN
TI INTERACTION OF GLYCERALDEHYDE 3 PHOSPHATE DEHYDROGENASE WITH DNA.

L3 ANSWER 36 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI Heteroduplex analysis of the sequence relationships between the genomes of
Kirsten and Harvey sarcoma viruses, their respective parental murine
leukemia viruses, and the rat endogenous 30S RNA

L3 ANSWER 37 OF 37 CAPLUS COPYRIGHT 2005 ACS on STN
TI Theta particles. Structure found in hamster sarcoma virus

=> s pdhvr1
L4 0 PDHVR1

=> d pdhvr1rz
L4 HAS NO ANSWERS
L4 0 SEA PDHVR1

=> s pdhvr1rz
L5 0 PDHVR1RZ

=> s pdhvr2
L6 0 PDHVR2

=> d pdhvr2rz
L6 HAS NO ANSWERS
L6 0 SEA PDHVR2

=> s pdhvr2rz
L7 0 PDHVR2RZ

=> s p17v71
L8 0 P17V71

=> s ((christian p?) or (christian, p?))/au
L9 443 ((CHRISTIAN P?) OR (CHRISTIAN, P?))/AU

=> s l9 and (helicoverpa armigera stunt virus or hasv)
L10 5 L9 AND (HELICOVERPA ARMIGERA STUNT VIRUS OR HASV)

=> dup rem l10
PROCESSING COMPLETED FOR L10
L11 5 DUP REM L10 (0 DUPLICATES REMOVED)

=> d 1-5 ti

L11 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
TI Heliothis armigera stunt virus and its uses in protecting plants by
genetic engineering

L11 ANSWER 2 OF 5 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
TI Pathology and properties of the tetravirus Helicoverpa
armigera stunt virus.

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TI Pathology and properties of the tetravirus **Helicoverpa armigera stunt virus**.

L11 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

TI Insect viruses and their uses in protecting plants

L11 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

TI A novel small RNA virus isolated from the cotton bollworm, **Helicoverpa armigera**

=> d ab

L11 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

AB The present invention relates to an isolated small RNA virus capable of infecting insect species including *Heliothis* species, and to the nucleotide sequences and proteins encoded thereby. The invention contemplates uses of the virus in controlling insect attack in plants. **Helicoverpa armigera stunt virus** (**HaSV**) was characterized and used as an isolated small RNA virus capable of controlling insect attack (including *Heliothis* species) in plants via various genetically engineered prepns., variants, or derivs. **HaSV** contained 2 RNA species, whose nucleotide sequences consisted of 5312 and 2478 nucleotides; RNA 2 also existed as a variant with an addnl. C residue at position 570. RNA 1 coded for the 1750-amino-acid RNA replicase (mol. weight 187 kDa) as well as 3 smaller proteins (P11a, P11b, P14) coded on its 3'-terminal region. RNA 2 coded for P17 and the capsid protein precursor (P71) which is proteolytically cleaved to form 7200-mol.-weight and 64,000-mol.-weight mature capsid proteins. Viral infection activates or facilitates pathogenesis of an unrelated virus and these 2 agents act synergistically in causing larval gut cell disruption; the virus, its expressed RNAs, and its proteins were bioassayed on larva. PCR primers designed for specific regions of the **HaSV** genome were used to construct full-length RNA 1 and 2 clones for cloning and expression as well as clones expressing P64 and P7 capsid proteins, P70 (the RNA 2 variant capsid precursor), P71, and P17. In addition to cloning in bacterial (*Escherichia coli*) systems, expression of **HaSV** products was achieved with baculovirus vectors in insect cells (*Spodoptera frugiperda* Sf9) as hosts. Northern blotting also confirmed that RNA electroporation into various plant protoplasts leads to RNA replication and expression of capsid proteins. Various ribozyme oligonucleotides were synthesized in order to get efficient replication, translation, or encapsidation of the RNA by excising structures downstream of the tRNA-like structures. Engineered forms of the virus are described in which a foreign, reporter, or insect toxin gene is inserted in place of the 5'-terminal portion of the RNA replicase gene such that encapsidation signals and the initiation codon are used to commence gene translation. Addnl., the capsid protein can be fused to an insecticidal protein toxin (ricin A or diphtheria toxin) to form a capsovector which protects the toxin from inactivation by insect gut.

=> d ;i

L11 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:58561 CAPLUS

DN 134:126824

TI *Heliothis armigera* stunt virus and its uses in protecting plants by genetic engineering

IN **Christian, Peter Daniel**; Gordon, Karl Hienrich Julius; Hanzlik, Terry Nelson

PA Commonwealth Scientific and Industrial Research Organization, Australia; Pacific Seeds Pty., Ltd.

SO U.S., 130 pp., Cont.-in-part of U.S. Ser. No. 440,552, abandoned. CODEN: USXXAM

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6177075	B1	20010123	US 1995-485355	19950607
	US 2003041349	A1	20030227	US 2001-991262	20011120
PRAI	AU 1992-4081	A	19920814		
	US 1993-89372	B2	19930708		
	US 1995-440552	B2	19950512		
	US 1995-440522	B1	19950512		
	US 1999-234238	B1	19990120		

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
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I IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.
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"HELP COMMANDS" at an arrow prompt (=>).

=> d 2 ab

L11 ANSWER 2 OF 5 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

AB A quantitative study of the pathogenicity of **Helicoverpa armigera stunt virus (HaSV)**

(Tetraviridae) isolates toward larvae of several heliothine species was conducted along with studies on the stability of the virus to a variety of chemical, enzymic, and temperature treatments. Surface contamination bioassays of several **HaSV** isolates against *H. armigera* produced 50% effective concentration (EC50) estimates ranging between 568 and 9244 virus particles (vp)/mm². Against mid 1st instar larvae of *H. armigera*, *H. punctigera*, and *Heliothis punctifera*, EC50 estimates for one isolate were 1288, 16,137, and 2667 vp/mm², respectively. The virulence of **HaSV** infection varied markedly with the age at which larvae were exposed to the virus. Presentation of the virus to the first three instars of *H. armigera* was accompanied by cessation of feeding, growth retardation, and eventual lethality, whereas no adverse effects were observed when later instars were exposed to the virus, even at very high concentrations. Active **HaSV** was recovered from frass of larvae exposed to the virus as 1st instars. Household bleach (1% v/v; 0.04% w/v available chlorine, 0.004% w/v NaOH), formaldehyde (1% w/v), and temperatures gtoreq 65degreeC completely inactivated **HaSV** in suspension. Treatments with ether, proteinase K (1 mg/ml), *H. armigera* gut contents, and temperatures between 22 and 55degreeC partially inactivated virus activity. No observable inactivation was observed after treatment with chloroform, chymotrypsin (1 mg/ml), trypsin (1 mg/ml), or RNase A (1 mg/ml). The virus was stable between pH 2.8 and pH 10.0 with around 60% loss of activity observed at pH 11.4. The pattern of pathogenic effects seen in several other insect species challenged by high concentrations of **HaSV** indicated that the host range of the virus is limited to species within the lepidopteran family Noctuidae. The apparently restricted host range of **HaSV** along with a number of other features indicate that this virus has considerable potential for the development of novel control agents for use against heliothine pests.

=> d 2 so

L11 ANSWER 2 OF 5 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
SO Biological Control, (January, 2001) Vol. 20, No. 1, pp. 67-75. print.
ISSN: 1049-9644.

=> d 3 ab

L11 ANSWER 3 OF 5 AGRICOLA Compiled and distributed by the National
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(2005) on STN

AB A quantitative study of the pathogenicity of **Helicoverpa armigera stunt virus (HaSV)** (Tetraviridae) isolates toward larvae of several heliothine species was conducted along with studies on the stability of the virus to a variety of chemical, enzymic, and temperature treatments. Surface contamination bioassays of several **HaSV** isolates against *H. armigera* produced 50% effective concentration (EC50) estimates ranging between 568 and 9244 virus particles (vp)/mm². Against mid 1st instar larvae of *H. armigera*, *H. punctigera*, and *Heliothis punctifera*, EC50 estimates for one isolate were 1288, 16,137, and 2667 vp/mm², respectively. The virulence of **HaSV** infection varied markedly with the age at which larvae were exposed to the virus. Presentation of the virus to the first three instars of *H. armigera* was accompanied by cessation of feeding, growth retardation, and eventual lethality, whereas no adverse effects were observed when later instars were exposed to the virus, even at very high concentrations. Active **HaSV** was recovered from frass of larvae exposed to the virus as 1st instars. Household bleach (1% v/v; 0.04% w/v available chlorine, 0.004% w/v NaOH), formaldehyde (1% w/v), and temperatures > or = 65 degrees C completely inactivated **HaSV** in suspension. Treatments with ether, proteinase K (1 mg/ml), *H. armigera* gut contents, and temperatures between 22 and 55 degrees C partially inactivated virus activity. No observable inactivation was observed after treatment with chloroform, chymotrypsin (1 mg/ml), trypsin (1 mg/ml), or RNase A (1 mg/ml). The virus was stable between pH 2.8 and pH 10.0 with around 60% loss of activity observed at pH 11.4. The pattern of pathogenic effects seen in several other insect species challenged by high concentrations of **HaSV** indicated that the host range of the virus is limited to species within the lepidopteran family Noctuidae. The apparently restricted host range of **HaSV** along with a number of other features indicate that this virus has considerable potential for the development of novel control agents for use against heliothine pests.

=> d 3 so

- L11 ANSWER 3 OF 5 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
- S0 Biological control : theory and applications in pest management, Jan 2001. Vol. 20, No. 1. p. 65-75
Publisher: Orlando, Fla. : Academic Press.
CODEN: BCIOEB; ISSN: 1049-9644

=> d 4 ab

- L11 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
- AB **Helicoverpa armigera stunt virus (HaSV)** was characterized and used as an isolated small RNA virus capable of controlling insect attack (including *Heliothis* species) in plants via various genetically engineered prepsns., variants, or derivs. **HaSV** contained 2 RNA species, whose nucleotide sequences consisted of 5312 and 2478 nucleotides; RNA 2 also existed as a variant with an addnl. C residue at position 570. RNA 1 coded for the 1750-amino-acid RNA replicase (mol. weight 187 kDa) as well as 3 smaller proteins (P11a, P11b, P14) coded on its 3'-terminal region. RNA 2 coded for P17 and the capsid protein precursor (P71) which is proteolytically cleaved to form 7200-mol.-weight and 64,000-mol.-weight mature capsid proteins. Viral infection activates or facilitates pathogenesis of an unrelated virus and these 2 agents act synergistically in causing larval gut cell disruption; the virus, its expressed RNAs, and its proteins were bioassayed on larva. PCR primers designed for specific regions of the **HaSV** genome were used to construct full-length RNA 1 and 2 clones for cloning and expression as well as clones expressing P64 and P7 capsid proteins, P70 (the RNA 2 variant capsid precursor), P71, and P17. In addition to cloning in bacterial (*Escherichia coli*) systems, expression of **HaSV** products was achieved with baculovirus vectors in insect cells (Spodoptera

frugiperda Sf9) as hosts. Northern blotting also confirmed that RNA electroporation into various plant protoplasts leads to RNA replication and expression of capsid proteins. Various ribozyme oligonucleotides were synthesized in order to get efficient replication, translation, or encapsidation of the RNA by excising structures downstream of the tRNA-like structures. Engineered forms of the virus are described in which a foreign, reporter, or insect toxin gene is inserted in place of the 5'-terminal portion of the RNA replicase gene such that encapsidation signals and the initiation codon are used to commence gene translation.

=> d 4 so

L11 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
SO PCT Int. Appl., 182 pp.
CODEN: PIXXD2

=> d 4 pi

L11 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9404660	A1	19940303	WO 1993-AU411	19930813
W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW				
AU 678982	B2	19970619	AU 1993-46912	19930813
AU 9346912	A1	19940315		
EP 786003	A1	19970730	EP 1993-917448	19930813
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
BR 9306907	A	19981208	BR 1993-6907	19930813
US 2003041349	A1	20030227	US 2001-991262	20011120

=> d 5 ab

L11 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AB A small RNA virus with novel characteristics has been isolated from laboratory-bred larvae of *Helicoverpa armigera*. Infection by the *H. armigera* stunt virus causes severe retardation of larval development and subsequent death. Its particles are isometric, 38 nm in diameter, and have a buoyant d. of 1.296 g/mL in cesium chloride. The viral capsid has two major nonglycosylated protein components with Mrs of 65,000 and 6000, and contains a genome composed of two nonpolyadenylated single-stranded RNA mols. with lengths of 2.4 kb and 5.5 kb. The 5' termini of these RNAs are capped; their 3' termini are unblocked. In vitro translations of the viral RNAs showed synthesis of large proteins of sizes near the maximum coding capacity of each strand along with synthesis of numerous smaller proteins; no evidence for processing of precursors was seen. The physicochem. properties of the virus are most similar to those of the Nudaurelia ω virus, a provisional member of the Tetraviridae, although no antigenic relationship was observed between the two viruses. The bipartite genome and distinct capsid structure of these two viruses indicate the existence of a previously unrecognized virus group.

=> d 5 so

L11 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
SO Journal of General Virology (1993), 74(9), 1805-10
CODEN: JGVIAI; ISSN: 0022-1317

=> s (gordon k?) or (gordon, k?))/au
UNMATCHED RIGHT PARENTHESIS 'K?))/AU'

The number of right parentheses in a query must be equal to the number of left parentheses.

=> s ((gordon k?) or (gordon, k?))/au
L12 1267 ((GORDON K?) OR (GORDON, K?))/AU

=> s l12 and (helicoverpa armigera stunt virus or hasv)
L13 23 L12 AND (HELICOVERPA ARMIGERA STUNT VIRUS OR HASV)

=> dup rem l13
PROCESSING COMPLETED FOR L13
L14 13 DUP REM L13 (10 DUPLICATES REMOVED)

=> d 1-13 ti

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(2005) on STN DUPLICATE 1

TI Infection of its lepidopteran host by the **Helicoverpa
armigera stunt virus** (Tetraviridae).

L14 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

TI Heliothis armigera stunt virus and its uses in protecting plants by
genetic engineering

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TI Pathology and properties of the tetravirus **Helicoverpa
armigera stunt virus**.

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(2005) on STN

TI Pathology and properties of the tetravirus **Helicoverpa
armigera stunt virus**.

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(2005) on STN DUPLICATE 2

TI Replication-independent assembly of an insect virus (Tetraviridae) in
plant cells.

L14 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3

TI Reverse transcription of a naturally occurring nonretroviral RNA produces
a precise deletion in the majority of its cDNA products

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(2005) on STN DUPLICATE 4

TI The specificity of **Helicoverpa armigera stunt
virus** infectivity.

L14 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5

TI Sequence of the Genomic RNA of Nudaurelia β Virus (Tetraviridae)
Defines a Novel Virus Genome Organization

L14 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

TI Altering the cell tropism of small RNA viruses and virus-like particles by
introduction of immunoglobulin-like domains into the p71 coat protein

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(2005) on STN DUPLICATE 6

TI Sequence of RNA2 of the **Helicoverpa armigera
stunt virus** (Tetraviridae) and bacterial expression of
its genes.

- L14 ANSWER 11 OF 13 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2005) on STN DUPLICATE 7
- TI The larger genomic RNA of *Helicoverpa armigera* stunt tetravirus encodes the viral RNA polymerase and has a novel 3'-terminal tRNA-like structure.
- L14 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Insect viruses and their uses in protecting plants
- L14 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
- TI A novel small RNA virus isolated from the cotton bollworm, *Helicoverpa armigera*

=> d 5 ab

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=> d 5 so

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(2005) on STN DUPLICATE 2
- SO Virology, Sept 15, 2001. Vol. 288, No. 1. p. 36-50
Publisher: Orlando, Fla. : Academic Press.
CODEN: VIRLAX; ISSN: 0042-6822

=> d 6 ab

- L14 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
- AB A precise, reproducible deletion made during in vitro reverse transcription of RNA2 from the icosahedral pos.-stranded ***Helicoverpa armigera* stunt virus** (Tetraviridae) is described. The deletion, located between two hexamer repeats, is a 50-base sequence that includes one copy of the hexamer repeat. Only the Moloney murine leukemia virus reverse transcriptase and its derivative Superscript I, carrying a deletion of the carboxy-terminal RNase H region, showed this response, indicating a template-switching mechanism different from one proposed that involves a RNase H-dependent strand transfer. Superscript II, however, which carries point mutations to reduce RNase H activity, does not cause a deletion. A possible mechanism involves the enzyme pausing at the 3' side of a stem-loop structure and the 3' end of the nascent DNA strand separating from the template and reannealing to the upstream hexamer repeat.

=> d 6 so

- L14 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
- SO IUBMB Life (2000), 49(3), 223-227
CODEN: IULIF8; ISSN: 1521-6543

=> d 8 ab

- L14 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
- AB The monopartite genome of Nudaurelia β virus, the type species of the Betatetravirus genus of the family Tetraviridae, consists of a single-stranded pos.-sense RNA (ss+RNA) of 6625 nucleotides containing two open reading frames (ORFs). The 5' proximal ORF of 5778 nucleotides encodes a protein of 215 kDa containing three functional domains

characteristic of RNA-dependent RNA polymerases of ss+RNA viruses. The 3' proximal ORF of 1836 nucleotides, which encodes the 66-kDa capsid precursor protein, overlaps the replicase gene by more than 99% (1827 nucleotides) and is in the +1 reading frame relative to the replicase reading frame. This capsid precursor is expressed via a 2656-nucleotide subgenomic RNA. The 3' terminus of the genome can be folded into a tRNA-like secondary structure that has a valine anticodon; the tRNA-like structure lacks a pseudoknot in the aminoacyl stem, a feature common to both genera of tetraviruses. Comparison of the sequences of Nudaurelia β virus and another member of the Tetraviridae, **Helicoverpa armigera stunt virus**, which is in the genus Omegatetravirus, shows identities of 31.6% for the replicase and 24.5% for the capsid protein. The viruses in the genera Betatetravirus and Omegatetravirus of the Tetraviridae are clearly related but show significant differences in their genome organization. It is concluded that the ancestral virus with a bipartite genome, as found in the genus Omegatetravirus, likely evolved from a virus with an unsegmented genome, as found in the genus Betatetravirus, through evolution of the subgenomic RNA into a sep. genomic component, with the accompanying loss of the capsid gene from the longer genomic RNA. (c) 1999 Academic Press.

=> d 8 so

L14 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
 SO Virology (1999), 258(1), 42-53
 CODEN: VIRLAX; ISSN: 0042-6822

=> d 10 ab

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 (2005) on STN DUPLICATE 6

AB The complete nucleotide sequence of RNA2 of **Helicoverpa armigera stunt virus (HaSV)**, a member of the Tetraviridae, was determined by characterization of cloned cDNA and PCR products and direct sequencing of genomic RNA. The capped, positive sense, single-stranded RNA is 2478 nucleotides in length and has two overlapping open reading frames (ORFs) likely to be cistrons which are situated between terminal non-coding regions of 282 and 168 bases, 5' and 3', respectively. Extensive secondary structure of the RNA strand is indicated, including a tRNA-like structure at the 3' terminus which is the first such structure discerned in an animal virus. The first ORF encodes a 17 kDa PEST protein (p17) of unknown function while the second ORF encodes the 71 kDa coat protein precursor (p71) that is cleaved at an Asn-Phe site into the 64 kDa and 7 kDa coat proteins. The precursor coat protein is 66% identical to that of another tetravirus, the Nudaurelia omega virus, with most of the difference residing in a 165 amino acid region located in the middle of the sequence. Despite the extensive similarity, no serological relationship was observed between the two viruses, suggesting that the dissimilar region is exposed on the capsid exterior. Expression in bacteria of the two RNA2 gene products shows they are likely to be expressed by a leaky scan-through mechanism. Bacterial expression of p71 did not produce virus-like particles while expression of p17 produced large arrays of mostly hollow, hexagonal tube-like structures.

=> d 10 so

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 (2005) on STN DUPLICATE 6
 SO The Journal of general virology, Apr 1995. Vol. 76, No. pt.4. p. 799-811
 Publisher: Reading : Society for General Microbiology.
 CODEN: JGVIAI; ISSN: 0022-1317

=> d 13 ab

L14 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

AB A small RNA virus with novel characteristics has been isolated from laboratory-bred larvae of *Helicoverpa armigera*. Infection by the H. armigera stunt virus causes severe retardation of larval development and subsequent death. Its particles are isometric, 38 nm in diameter, and have a buoyant d. of 1.296 g/mL in cesium chloride. The viral capsid has two major nonglycosylated protein components with Mrs of 65,000 and 6000, and contains a genome composed of two nonpolyadenylated single-stranded RNA mols. with lengths of 2.4 kb and 5.5 kb. The 5' termini of these RNAs are capped; their 3' termini are unblocked. In vitro translations of the viral RNAs showed synthesis of large proteins of sizes near the maximum coding capacity of each strand along with synthesis of numerous smaller proteins; no evidence for processing of precursors was seen. The physicochem. properties of the virus are most similar to those of the Nudaurelia ϕ virus, a provisional member of the Tetraviridae, although no antigenic relationship was observed between the two viruses. The bipartite genome and distinct capsid structure of these two viruses indicate the existence of a previously unrecognized virus group.

=> d 13 so

L14 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

SO Journal of General Virology (1993), 74(9), 1805-10
CODEN: JGVIAI; ISSN: 0022-1317

=> s ((hanzlik t?) or (hanzlik, t?))/au

L15 94 ((HANZLIK T?) OR (HANZLIK, T?))/AU

=> s l15 and (helicoverpa armigera stunt virus or hasv)

L16 23 L15 AND (HELICOVERPA ARMIGERA STUNT VIRUS OR HASV)

=> dup rem l16

PROCESSING COMPLETED FOR L16

L17 13 DUP REM L16 (10 DUPLICATES REMOVED)

=> d 1-13 ti

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(2005) on STN DUPLICATE 1

TI Infection of its lepidopteran host by the **Helicoverpa armigera stunt virus** (Tetraviridae).

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TI *Heliothis armigera* stunt virus and its uses in protecting plants by genetic engineering

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TI Pathology and properties of the tetravirus **Helicoverpa armigera stunt virus**.

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TI Pathology and properties of the tetravirus **Helicoverpa armigera stunt virus**.

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- (2005) on STN DUPLICATE 2
- TI Replication-independent assembly of an insect virus (Tetraviridae) in plant cells.
- L17 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
- TI Reverse transcription of a naturally occurring nonretroviral RNA produces a precise deletion in the majority of its cDNA products
- L17 ANSWER 7 OF 13 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 4
- TI The specificity of **Helicoverpa armigera stunt virus** infectivity.
- L17 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
- TI Sequence of the Genomic RNA of Nudaurelia β Virus (Tetraviridae) Defines a Novel Virus Genome Organization
- L17 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Altering the cell tropism of small RNA viruses and virus-like particles by introduction of immunoglobulin-like domains into the p71 coat protein
- L17 ANSWER 10 OF 13 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
- TI Sequence of RNA2 of the **Helicoverpa armigera stunt virus** (Tetraviridae) and bacterial expression of its genes.
- L17 ANSWER 11 OF 13 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 7
- TI The larger genomic RNA of *Helicoverpa armigera* stunt tetravirus encodes the viral RNA polymerase and has a novel 3'-terminal tRNA-like structure.
- L17 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Insect viruses and their uses in protecting plants
- L17 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
- TI A novel small RNA virus isolated from the cotton bollworm, *Helicoverpa armigera*

=> d 10 ab

- L17 ANSWER 10 OF 13 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 6
- AB The complete nucleotide sequence of RNA2 of **Helicoverpa armigera stunt virus** (HaSV), a member of the Tetraviridae, was determined by characterization of cloned cDNA and PCR products and direct sequencing of genomic RNA. The capped, positive sense, single-stranded RNA is 2478 nucleotides in length and has two overlapping open reading frames (ORFs) likely to be cistrons which are situated between terminal non-coding regions of 282 and 168 bases, 5' and 3', respectively. Extensive secondary structure of the RNA strand is indicated, including a tRNA-like structure at the 3' terminus which is the first such structure discerned in an animal virus. The first ORF encodes a 17 kDa PEST protein (p17) of unknown function while the second ORF encodes the 71 kDa coat protein precursor (p71) that is cleaved at an Asn-Phe site into the 64 kDa and 7 kDa coat proteins. The precursor coat protein is 66% identical to that of another tetravirus, the *Nudaurelia omega* virus, with most of the difference residing in a 165 amino acid region located in the middle of the sequence. Despite the extensive similarity, no serological

relationship was observed between the two viruses, suggesting that the dissimilar region is exposed on the capsid exterior. Expression in bacteria of the two RNA2 gene products shows they are likely to be expressed by a leaky scan-through mechanism. Bacterial expression of p71 did not produce virus-like particles while expression of p17 produced large arrays of mostly hollow, hexagonal tube-like structures.

=> d 10 so

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(2005) on STN DUPLICATE 6
- SO The Journal of general virology, Apr 1995. Vol. 76, No. pt.4. p. 799-811
Publisher: Reading : Society for General Microbiology.
CODEN: JGVIAI; ISSN: 0022-1317

=> d 11 ab

- L17 ANSWER 11 OF 13 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2005) on STN DUPLICATE 7
- AB In this paper we report the complete nucleotide sequence of the larger segment (5312 nucleotides) of the bipartite RNA genome of Helicoverpa armigera stunt tetravirus (**HaSV**). **HaSV** therefore becomes the first member of the Tetraviridae, a virus family with a host range restricted to lepidopteran insects, whose genome has been completely sequenced. **HaSV** RNA 1 encodes a 187K protein which includes three domains conserved in RNA-dependent RNA polymerases of RNA viruses in the alpha-like superfamily. Analysis of the replicase sequence confirms the status of the Tetraviridae as a distinct family within this superfamily, which includes animal, plant, and insect viruses, and shows the least-distantly related replicase for all three domains to be that of the hepatitis E virus. Another feature of the nonpolyadenylated **HaSV** genomic RNAs is a well-conserved 3'-terminal tRNA-like structure, the first such structure discerned in an animal virus. However, in contrast to the tRNA-like structures on some plant virus RNAs, the **HaSV** structure, which has a valine anticodon (CAU), appears to form without a pseudoknot and therefore resembles authentic tRNA(Val) more closely than do the plant viral structures. The implications of these observations for our understanding of RNA virus evolution are discussed.

=> d 11 so

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(2005) on STN DUPLICATE 7
- SO Virology, Apr 1, 1995. Vol. 208, No. 1. p. 84-98
Publisher: Orlando, Fla. : Academic Press.
CODEN: VIRLAX; ISSN: 0042-6822

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<input type="checkbox"/>	L2	l1 and plant	3
<input type="checkbox"/>	L1	helicoverpa armigera stunt virus	3

END OF SEARCH HISTORY